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OLIFF & BERRIDGE, PLC
P.O. BOX 320850
ALEXANDRIA, VA 22320-4850

EXAMINER	
RUSH, ERIC	
ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,926	KIRA, MASATAKA	
	Examiner	Art Unit	
	ERIC RUSH	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is responsive to the amendments and remarks received 22 September 2009. Claims 1, 2 and 4 - 25 are currently pending.

Claim Rejections - 35 USC § 101

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. The rejections to claims 1, 2, 4 - 15, 18, 19, 24 and 25 under 35 U.S.C. 101 are hereby withdrawn in view of the amendments and remarks received 22 September 2009.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 2, 13 and 16 - 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 2, 13 and 16 - 25 each claim steps of processing a region to make it more inconspicuous than the target regions *except for the processed region.* It is unclear to the Examiner how it is possible to carry out processing on a region to make it more inconspicuous than another region *except*

for the region that was processed. In other words how can you make a region more inconspicuous while at the same time not making it more inconspicuous? For purposes of examination the Examiner will treat the claims as requiring processing to make the processed regions more inconspicuous than target regions.

6. Claims 4 - 12, 14 and 15 are also rejected under 35 U.S.C. 112 second paragraph as being dependent upon a rejected base claim.

7. Claims 2, 13, 17, 19, 21, 23 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claims 2, 13, 17, 19, 21, 23 and 25 recite the limitation "the target regions" in lines 10 - 11 of claim 2, line 6 of claim 13, lines 10 - 11 of claim 17, lines 10 - 11 of claim 19, lines 10 - 11 of claim 21, lines 11 - 12 of claim 23 and lines 12 - 13 of claim 25. There is insufficient antecedent basis for this limitation in the claim.

9. Claims 5, 7, 9, 11 and 15 are also rejected under 35 U.S.C. 112 second paragraph as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 102

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 1, 16, 18, 20 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Wood U.S. Patent No. 6,023,263.

- With regards to claim 1 [as best understood by the Examiner], Wood teaches a method for generating a stereoscopic image set of images having a left image and a right image for stereoscopic vision by a stereoscopic image generating apparatus, (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) said method comprising: a processed region extraction step of extracting a more inconspicuous region as a processed region by identifying the more inconspicuous region between left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image; (Wood, Figs. 2 & 3 Elements G and G', Column 3 Line 57 - Column 4 Line 40 [G and G' are locations within the image which do not include pairs of fused points between the left and right image.]) and a processed region processing step of carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the processed region extracted in the processed region extraction step than the target regions except for the processed region. (Wood, Column 4 Lines 3 - 41 [Wood teaches using post-processing using nearest occluded pixel information, a z-buffer for the nearest visible pixels and for the nearest occluded pixels, to fill in the gaps caused by shifts between left and right images so as to make the processed region less noticeable, more inconspicuous, i.e. "the filled gaps are highly correlated to the remainder of the image and as such are unobtrusive."])

- With regards to claim 16 [as best understood by the Examiner], Wood teaches a stereoscopic image generating apparatus for generating a stereoscopic image set of images having a left image and a right image for stereoscopic vision, (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) said stereoscopic image generating apparatus comprising: processed region extraction means of extracting a more inconspicuous region as a processed region by identifying the more inconspicuous region between left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image; (Wood, Figs. 2 & 3 Elements G and G', Column 3 Line 57 - Column 4 Line 40 [G and G' are locations within the image which do not include pairs of fused points between the left and right image.]) and a processed region processing means for carrying our processing of generating the stereoscopic image set of images so as to make more inconspicuous the processed region extracted in the processed region extraction means than the target regions except for the processed region. (Wood, Column 4 Lines 3 - 41 [Wood teaches using post-processing using nearest occluded pixel information, a z-buffer for the nearest visible pixels and for the nearest occluded pixels, to fill in the gaps caused by shifts between left and right images so as to make the processed region less noticeable,

more inconspicuous, i.e. “the filled gaps are highly correlated to the remainder of the image and as such are unobtrusive.”])

- With regards to claim 18 [as best understood by the Examiner], Wood teaches a stereoscopic viewing method of watching a stereoscopic image set of images having a left image and a right image for stereoscopic vision by a stereoscopic image generating apparatus, (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) said stereoscopic viewing method comprising: a processed region extraction step of extracting a more inconspicuous region as a processed region by identifying the more inconspicuous region between left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image; (Wood, Figs. 2 & 3 Elements G and G’, Column 3 Line 57 - Column 4 Line 40 [G and G’ are locations within the image which do not include pairs of fused points between the left and right image.]) and a processed region processing step of carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the processed region extracted in the processed region extraction step than the target regions except for the processed region. (Wood, Column 4 Lines 3 - 41 [Wood teaches using post-processing using nearest occluded pixel information, a z-buffer for the nearest visible pixels and for the nearest occluded pixels, to fill in the gaps caused by shifts

between left and right images so as to make the processed region less noticeable, more inconspicuous, i.e. “the filled gaps are highly correlated to the remainder of the image and as such are unobtrusive.”])

- With regards to claim 20 [as best understood by the Examiner], Wood teaches a stereoscopic viewing apparatus for showing a stereoscopic image set of images having a left image and a right image for stereoscopic vision, (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) said stereoscopic viewing apparatus comprising: processed region extraction means of extracting a more inconspicuous regions as a processed region by identifying the more inconspicuous region between left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image; (Wood, Figs. 2 & 3 Elements G and G’, Column 3 Line 57 - Column 4 Line 40 [G and G’ are locations within the image which do not include pairs of fused points between the left and right image.]) and a processed region processing means for carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the processed region extracted in the processed region extraction means than the target regions except for the processed region. (Wood, Column 4 Lines 3 - 41 [Wood teaches using post-processing using nearest occluded pixel information, a z-buffer for the nearest visible pixels and for the nearest occluded pixels, to fill in

the gaps caused by shifts between left and right images so as to make the processed region less noticeable, more inconspicuous, i.e. “the filled gaps are highly correlated to the remainder of the image and as such are unobtrusive.”])

- With regards to claim 22 [as best understood by the Examiner], Wood teaches a computer readable medium storing a program for controlling a apparatus for generating a stereoscopic image set of images having a left image and a right image for stereoscopic vision, (Wood, Column 4 Line 62 - Column 5 Line 41) said program causing a stereoscopic image generating apparatus to execute: a processed region extraction step of extracting a more inconspicuous region as a processed by identifying the more inconspicuous region between left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image; (Wood, Figs. 2 & 3 Elements G and G’, Column 3 Line 57 - Column 4 Line 40 [G and G’ are locations within the image which do not include pairs of fused points between the left and right image.]) and a processed region processing step of carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the processed region extracted in the processed region extraction step than the target regions except for the processed region. (Wood, Column 4 Lines 3 - 41 [Wood teaches using

post-processing using nearest occluded pixel information, a z-buffer for the nearest visible pixels and for the nearest occluded pixels, to fill in the gaps caused by shifts between left and right images so as to make the processed region less noticeable, more inconspicuous, i.e. "the filled gaps are highly correlated to the remainder of the image and as such are unobtrusive."])

Claim Rejections - 35 USC § 103

12. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

13. Claims 2, 5, 7, 9, 11, 13, 15, 17, 19, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood U.S. Patent No. 6,023,263 in view of Blake et al. U.S. Publication No. 2005/0232510 A1.

- With regards to claim 2 [as best understood by the Examiner], Wood teaches a method for generating a stereoscopic image set of images having a left image and a right image for stereoscopic vision by a stereoscopic image generating apparatus, (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) said method comprising: a processed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image; (Wood, Figs. 2 & 3 Elements G and G', Column 3 Line 57 -

Column 4 Line 40 [G and G' are locations within the image which do not include pairs of fused points between the left and right image.]) and a processed region processing step of carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the processed region extracted in the processed region extraction step than the target regions except for the processed region. (Wood, Column 4 Lines 3 - 41 [Wood teaches using post-processing using nearest occluded pixel information, a z-buffer for the nearest visible pixels and for the nearest occluded pixels, to fill in the gaps caused by shifts between left and right images so as to make the processed region less noticeable, more inconspicuous, i.e. "the filled gaps are highly correlated to the remainder of the image and as such are unobtrusive."]) Wood fails to teach a processed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a processed region. Pertaining to analogous art, Blake et al. teach a processed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image *which are displayed on a display plane as a processed region*. (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the

teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to provide a user with information regarding which picture elements are processed picture elements as opposed to original picture elements. This combination could have been completed using well known techniques and would likely yield predictable results, in that the regions extracted by Wood that fail to have a pair of fused points between a left and right image, and therefor require post-processing, would be displayed to a user.

- With regards to claim 5 [as best understood by the Examiner], Wood in view of Blake et al. teach the generating method as claimed in claim 2. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of blurring the processed region. Pertaining to analogous art, Blake et al. teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of blurring the processed region. (Blake et al., Page 3 Paragraphs 0039 – 0041, a low-pass smoothing operation is performed on the disparity patch which induces blur) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Wood in view of Blake et al. with further teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing

to store the z-buffered information as used by Wood for making the removed region more inconspicuous. This combination could have been completed using well known techniques and would likely yield predictable results, in that z-buffer information would no longer need to be stored for making the processed regions more inconspicuous.

- With regards to claim 7 [as best understood by the Examiner], Wood in view of Blake et al. teach the method as claimed in claim 2. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of reducing contrast of the processed region. Pertaining to analogous art, Blake et al. teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of reducing contrast of the processed region. (Blake et al., Page 3 Paragraphs 0039 – 0041, a low-pass smoothing operation is performed on the disparity patch which would induce a contrast reduction) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Wood in view of Blake et al. with further teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous. This combination could have been completed using well known techniques and

would likely yield predictable results, in that z-buffer information would no longer need to be stored for making the processed regions more inconspicuous.

- With regards to claim 9 [as best understood by the Examiner], Wood in view of Blake et al. teach the method as claimed in claim 2. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of reducing saturation or brightness of the processed region. Pertaining to analogous art, Blake et al. teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of reducing saturation or brightness of the processed region. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Wood in view of Blake et al. with further teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous. This combination could have been completed using well known techniques and would likely yield predictable results, in that z-buffer information would no longer need to be stored for making the processed regions more inconspicuous.

- With regards to claim 11 [as best understood by the Examiner], Wood in view of Blake et al. teach the method as claimed in claim 2. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of bringing a hue of the professed region close to a cold color family. Pertaining to analogous art, Blake et al. teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of bringing a hue of the professed region close to a cold color family. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Wood in view of Blake et al. with further teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous. This combination could have been completed using well known techniques and would likely yield predictable results, in that z-buffer information would no longer need to be stored for making the processed regions more inconspicuous.

- With regards to claim 13 [as best understood by the Examiner], Wood teaches a stereoscopic image set of images having a left image and a

right image for stereoscopic vision, (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) the stereoscopic image set of images being processed so as to make more inconspicuous left and right regions which do not include fused points corresponding to each other in the left image and the right image than the target regions except for the processed region. (Wood, Fig. 2, Column 3 Line 57 - Column 4 Line 40 [Wood teaches using post-processing using nearest occluded pixel information, a z-buffer for the nearest visible pixels and for the nearest occluded pixels, to fill in the gaps caused by shifts between left and right images so as to make the processed region less noticeable, more inconspicuous, i.e. “the filled gaps are highly correlated to the remainder of the image and as such are unobtrusive.”]) Pertaining to analogous art, Blake et al. teach wherein left and right regions which do not include fused points corresponding to each other in the left image and the right image are displayed on a display plane. (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to provide a user with information regarding which picture elements are processed picture elements as opposed to original picture elements. This combination could have been completed using well known techniques and would likely yield predictable results, in that the

regions extracted by Wood that fail to have a pair of fused points between a left and right image, and therefor require post-processing, would be displayed to a user.

- With regards to claim 15 [as best understood by the Examiner], Wood in view of Blake et al. teach the method as claimed in claim 2 Wood fails to teach wherein the processing of generating a stereoscopic image set of images so as to make more inconspicuous is one of or a combination of the following processings: (1) processing of blurring the processed region; (2) processing of reducing contrast of the processed region; (3) processing of reducing saturation or brightness of the processed region; (4) processing of bringing a hue of the processed region close to a cold color family; and (5) processing of bringing a hue, saturation or brightness of the processed region close to a hue, saturation or brightness of the target regions except for the processed region. Pertaining to analogous art, Blake et al. teach wherein the processing of generating a stereoscopic image set of images so as to make more inconspicuous is one of or a combination of the following processings: (1) processing of blurring the processed region; (2) processing of reducing contrast of the processed region; (3) processing of reducing saturation or brightness of the processed region; (4) processing of bringing a hue of the processed region close to a cold color family; and (5) processing of bringing a hue,

saturation or brightness of the processed region close to a hue, saturation or brightness of the target regions except for the processed region. (Blake et al., Page 3 Paragraphs 0039 – 0041 and Page 4 Paragraph 0053 – Page 5 Paragraph 0058) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Wood in view of Blake et al. with further teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous. This combination could have been completed using well known techniques and would likely yield predictable results, in that z-buffer information would no longer need to be stored for making the processed regions more inconspicuous.

- With regard to claim 17 [as best understood by the Examiner], Wood teaches a stereoscopic image generating apparatus for generating a stereoscopic image set of images having a left image and a right image for stereoscopic vision, (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) said stereoscopic image generating apparatus comprising: a processed region extraction means of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image as a processed region; (Wood, Figs. 2 & 3 Elements G and G', Column 3 Line 57 - Column 4 Line 40 [G and G' are

locations within the image which do not include pairs of fused points between the left and right image.]) and a processed region processing means of carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the processed region identified by said processed region extraction means than the target regions except for the processed region. (Wood, Column 4 Lines 3 - 41 [Wood teaches using post-processing using nearest occluded pixel information, a z-buffer for the nearest visible pixels and for the nearest occluded pixels, to fill in the gaps caused by shifts between left and right images so as to make the processed region less noticeable, more inconspicuous, i.e. “the filled gaps are highly correlated to the remainder of the image and as such are unobtrusive.”]) Wood fails to teach a processed region extraction means of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a processed region. Pertaining to analogous art, Blake et al. teach a processed region extraction means of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image *which are displayed on a display plane* as a processed region. (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the

teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to provide a user with information regarding which picture elements are processed picture elements as opposed to original picture elements. This combination could have been completed using well known techniques and would likely yield predictable results, in that the regions extracted by Wood that fail to have a pair of fused points between a left and right image, and therefor require post-processing, would be displayed to a user.

- With regards to claim 19 [as best understood by the Examiner], Wood teaches a method for generating a stereoscopic image set of images having a left image and a right image for stereoscopic vision by a stereoscopic image generating apparatus, (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) said stereoscopic viewing method comprising: a processed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image as a processed region; (Wood, Figs. 2 & 3 Elements G and G', Column 3 Line 57 - Column 4 Line 40 [G and G' are locations within the image which do not include pairs of fused points between the left and right image.]) and a processed region processing step of carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the processed region

extracted in the processed region extraction step than the target regions except for the processed region. (Wood, Column 4 Lines 3 - 41 [Wood teaches using post-processing using nearest occluded pixel information, a z-buffer for the nearest visible pixels and for the nearest occluded pixels, to fill in the gaps caused by shifts between left and right images so as to make the processed region less noticeable, more inconspicuous, i.e. "the filled gaps are highly correlated to the remainder of the image and as such are unobtrusive."]) Wood fails to teach a processed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image *which are displayed on a display plane* as a processed region. Pertaining to analogous art, Blake et al. teach a processed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image *which are displayed on a display plane* as a processed region. (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to provide a user with information regarding which picture elements are processed picture elements as opposed to original picture elements. This combination could have been completed using well known techniques and

would likely yield predictable results, in that the regions extracted by Wood that fail to have a pair of fused points between a left and right image, and therefor require post-processing, would be displayed to a user.

- With regards to claim 21 [as best understood by the Examiner], Wood teaches a apparatus for generating a stereoscopic image set of images having a left image and a right image for stereoscopic vision, (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) said apparatus comprising: a processed region extraction means of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image as a processed region; (Wood, Figs. 2 & 3 Elements G and G', Column 3 Line 57 - Column 4 Line 40 [G and G' are locations within the image which do not include pairs of fused points between the left and right image.]) and a processed region processing means of carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the processed region extracted in the processed region extraction means than the target region except for the processed region. (Wood, Column 4 Lines 3 - 41 [Wood teaches using post-processing using nearest occluded pixel information, a z-buffer for the nearest visible pixels and for the nearest occluded pixels, to fill in the gaps caused by shifts between left and right images so as to make the processed region less noticeable, more

inconspicuous, i.e. “the filled gaps are highly correlated to the remainder of the image and as such are unobtrusive.”]) Wood fails to teach a processed region extraction means of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a processed region. Pertaining to analogous art, Blake et al. teach a processed region extraction means of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a processed region. (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to provide a user with information regarding which picture elements are processed picture elements as opposed to original picture elements. This combination could have been completed using well known techniques and would likely yield predictable results, in that the regions extracted by Wood that fail to have a pair of fused points between a left and right image, and therefor require post-processing, would be displayed to a user.

- With regards to claim 23 [as best understood by the Examiner], Wood teaches a computer readable medium storing a program for controlling an apparatus for generating a stereoscopic image set of images having a left image and a right image for stereoscopic vision, (Wood, Column 4 Line 62 - Column 5 Line 41) said program causing said stereoscopic image generating apparatus to execute: a processed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image as a processed region; (Wood, Figs. 2 & 3 Elements G and G', Column 3 Line 57 - Column 4 Line 40 [G and G' are locations within the image which do not include pairs of fused points between the left and right image.]) and a processed region processing step of carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the processed region extracted in the processed region extraction step than the target regions except for the processed region. Wood, Column 4 Lines 3 - 41 [Wood teaches using post-processing using nearest occluded pixel information, a z-buffer for the nearest visible pixels and for the nearest occluded pixels, to fill in the gaps caused by shifts between left and right images so as to make the processed region less noticeable, more inconspicuous, i.e. "the filled gaps are highly correlated to the remainder of the image and as such are unobtrusive."]) Wood fails to teach a processed region extraction step of extracting left and right

regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a processed region. Pertaining to analogous art, Blake et al. teach a processed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a processed region. (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to provide a user with information regarding which picture elements are processed picture elements as opposed to original picture elements. This combination could have been completed using well known techniques and would likely yield predictable results, in that the regions extracted by Wood that fail to have a pair of fused points between a left and right image, and therefor require post-processing, would be displayed to a user.

14. Claims 4, 6, 8, 10, 12 and 14 are under 35 U.S.C. 103(a) as being unpatentable over Wood U.S. Patent No. 6,023,263 as applied to claim 1 above, and further in view of Blake et al. U.S. Publication No. 2005/0232510 A1.

- With regards to claim 4 [as best understood by the Examiner], Wood teaches the method as claimed in claim 1. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of blurring the processed region. Pertaining to analogous art, Blake et al. teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of blurring the processed region. (Blake et al., Page 3 Paragraphs 0039 – 0041, a low-pass smoothing operation is performed on the disparity patch which induces blur) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous. This combination could have been completed using well known techniques and would likely yield predictable results, in that z-buffer information would no longer need to be stored for making the processed regions more inconspicuous.

- With regards to claim 6 [as best understood by the Examiner], Wood teaches the method as claimed in claim 1. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to

make more inconspicuous is a processing of reducing contrast of the processed region. Pertaining to analogous art, Blake et al. teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of reducing contrast of the processed region. (Blake et al., Page 3 Paragraphs 0039 – 0041, a low-pass smoothing operation is performed on the disparity patch which would induce a contrast reduction) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous. This combination could have been completed using well known techniques and would likely yield predictable results, in that z-buffer information would no longer need to be stored for making the processed regions more inconspicuous.

- With regards to claim 8 [as best understood by the Examiner], Wood teaches the method as claimed in claim 1. Wood fails to teach wherein the processing generating the stereoscopic image set of images so as to make more inconspicuous is a processing of reducing saturation or brightness of the processed region. Pertaining to analogous art, Blake et al. teach wherein the processing generating the stereoscopic image set of

images so as to make more inconspicuous is a processing of reducing saturation or brightness of the processed region. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous. This combination could have been completed using well known techniques and would likely yield predictable results, in that z-buffer information would no longer need to be stored for making the processed regions more inconspicuous.

- With regards to claim 10 [as best understood by the Examiner], Wood teaches the generating method as claimed in claim 1. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of bringing a hue of the processed region to a cold color family. Pertaining to analogous art, Blake et al. teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of bringing a hue of the processed region to a cold color family. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058, the process alters the color of the inconspicuous region bringing the hue to

any color family, which includes cold colors) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous. This combination could have been completed using well known techniques and would likely yield predictable results, in that z-buffer information would no longer need to be stored for making the processed regions more inconspicuous.

- With regards to claim 12 [as best understood by the Examiner], Wood teaches the method as claimed in claim 1. Wood fails to teach wherein the processing of generating the stereoscopic image set of images to as to make more inconspicuous is a processing of bringing a hue, saturation or brightness of the target regions except for the processed region. Pertaining to analogous art, Blake et al. teach wherein the processing of generating the stereoscopic image set of images to as to make more inconspicuous is a processing of bringing a hue, saturation or brightness of the target regions except for the processed region. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification

would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous. This combination could have been completed using well known techniques and would likely yield predictable results, in that z-buffer information would no longer need to be stored for making the processed regions more inconspicuous.

- With regards to claim 14 [as best understood by the Examiner], Wood teaches the method as claimed in claim 1. Wood fails to teach wherein the processing of generating a stereoscopic image set of images so as to make more inconspicuous is one of or a combination of the following processings: (1) processing of blurring the processed region; (2) processing of reducing contrast of the processed region; (3) processing of reducing saturation or brightness of the removed region; (4)processing of bringing a hue of the processed region close to a cold color family; and (5) processing of bringing a hue, saturation or brightness of the processed region close to a hue, saturation or brightness of the target regions except for the processed region. Pertaining to analogous art, Blake et al. teach wherein the processing of generating a stereoscopic image set of images so as to make more inconspicuous is one of or a combination of the following processings: (1) processing of blurring the processed region; (2) processing of reducing contrast of the processed region; (3) processing of

reducing saturation or brightness of the removed region; (4) processing of bringing a hue of the processed region close to a cold color family; and (5) processing of bringing a hue, saturation or brightness of the processed region close to a hue, saturation or brightness of the target regions except for the processed region. (Blake et al., Page 3 Paragraphs 0039 – 0041 and Page 4 Paragraph 0053 – Page 5 Paragraph 0058) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous. This combination could have been completed using well known techniques and would likely yield predictable results, in that z-buffer information would no longer need to be stored for making the processed regions more inconspicuous.

15. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wood U.S. Patent No. 6,023,263 in view of Mashitani et al. U.S. Publication No. 2005/0089212 A1.

- With regards to claim 24 [as best understood by the Examiner], Wood teaches a method for generating a stereoscopic image set of images which has a left image and a right image for stereoscopic vision, and

forms a virtual stereoscopic image by vergence angles generated from individual points corresponding in the left image and the right image by a stereoscopic image generating apparatus, (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) said method comprising: a processed region extraction step of extracting a more inconspicuous regions as a processed region by identifying the more inconspicuous region between left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image; (Wood, Figs. 2 & 3 Elements G and G', Column 3 Line 57 - Column 4 Line 40 [G and G' are locations within the image which do not include pairs of fused points between the left and right image.]) and a processed region processing step of carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the processed region extracted in the processed region extraction step than the target regions except for the processed region. (Wood, Column 4 Lines 3 - 41 [Wood teaches using post-processing using nearest occluded pixel information, a z-buffer for the nearest visible pixels and for the nearest occluded pixels, to fill in the gaps caused by shifts between left and right images so as to make the processed region less noticeable, more inconspicuous, i.e. "the filled gaps are highly correlated to the remainder of the image and as such are unobtrusive."]) Wood fails to teach a vergence angle modifying step of increasing a stereoscopic effect by

carrying out deformation processing of a left image and a right image of a stereoscopic image set of images which are prepared in advance to form the virtual stereoscopic image, by increasing or decreasing the vergence angles generated by the individual points of the stereoscopic image set of images according to a prescribed rule, and by altering a depth of the virtual stereoscopic image. Pertaining to analogous art, Mashitani et al. teach a vergence angle modifying step of increasing a stereoscopic effect by carrying out deformation processing of a left image and a right image of a stereoscopic image set of images which are prepared in advance to form the virtual stereoscopic image, by increasing or decreasing the vergence angles generated by the individual points of the stereoscopic image set of images according to a prescribed rule, and by altering a depth of the virtual stereoscopic image. (Mashitani et al., Page 25 Paragraphs 0352 – 0357 and Page 27 Paragraph 0371) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Mashitani et al. This modification would have been prompted in order to minimize occlusions and artifacts produced in the stereographic image. The combination would enhance the base device of Wood in the same way the teachings of Mashitani et al. enhance their stereoscopic device. The combination could be completed according to well known techniques and would likely yield predictable results, in that the enhancement of Mashitani et al. would

reduce the number of occlusions and artifacts produced in the image set of images and therefor reduce the need for extensive post-processing procedures to combat binocular rivalry between left and right images.

16. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wood U.S. Patent No. 6,023,263 in view of Blake et al. U.S. Publication No. 2005/0232510 A1 and further in view of Mashitani et al. U.S. Publication No. 2005/0089212 A1.

- With regards to claim 25 [as best understood by the Examiner], Wood teaches a method for generating a stereoscopic image set of images which has a left image and a right image for stereoscopic vision, and forms a virtual stereoscopic image by vergence angles generated from individual points corresponding in the left image and the right image by a stereoscopic image generating apparatus, (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) said method comprising: a processed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image as a processed region; (Wood, Figs. 2 & 3 Elements G and G', Column 3 Line 57 - Column 4 Line 40 [G and G' are locations within the image which do not include pairs of fused points between the left and right image.]) and a processed region processing step of carrying out processing of generating the stereoscopic image set of images so as to

make more inconspicuous the processed region extracted in the processed region extraction step than the target regions except for the processed region. (Wood, Column 4 Lines 3 - 41 [Wood teaches using post-processing using nearest occluded pixel information, a z-buffer for the nearest visible pixels and for the nearest occluded pixels, to fill in the gaps caused by shifts between left and right images so as to make the processed region less noticeable, more inconspicuous, i.e. “the filled gaps are highly correlated to the remainder of the image and as such are unobtrusive.”]) Wood fails to teach a processed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a processed region; and a vergence angle modifying step of increasing a stereoscopic effect by carrying out deformation processing of a left image and a right image of a stereoscopic image which are prepared in advance to form the virtual stereoscopic image, by increasing or decreasing the vergence angles generated by the individual points of the stereoscopic image set of images according to a prescribed rule, and by altering a depth of the virtual stereoscopic image. Pertaining to analogous art, Blake et al. teach a processed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a processed region.

(Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) Blake et al. fail to teach a vergence angle modifying step of increasing a stereoscopic effect by carrying out deformation processing of a left image and a right image of a stereoscopic image which are prepared in advance to form the virtual stereoscopic image, by increasing or decreasing the vergence angles generated by the individual points of the stereoscopic image set of images according to a prescribed rule, and by altering a depth of the virtual stereoscopic image. Pertaining to analogous art, Mashitani et al. teach a vergence angle modifying step of increasing a stereoscopic effect by carrying out deformation processing of a left image and a right image of a stereoscopic image which are prepared in advance to form the virtual stereoscopic image, by increasing or decreasing the vergence angles generated by the individual points of the stereoscopic image set of images according to a prescribed rule, and by altering a depth of the virtual stereoscopic image. (Mashitani et al., Page 25 Paragraphs 0352 – 0357 and Page 27 Paragraph 0371) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to provide a user with information regarding which picture elements are processed picture elements as opposed to original picture elements. This combination could have been completed using well known

techniques and would likely yield predictable results, in that the regions extracted by Wood that fail to have a pair of fused points between a left and right image, and therefor require post-processing, would be displayed to a user. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Wood in view of Blake et al. with the teachings of Mashitani et al. This modification would have been prompted in order to minimize occlusions and artifacts produced in the stereographic image. The combination would enhance the base device of Wood in the same way the teachings of Mashitani et al. enhance their stereoscopic device. The combination could be completed according to well known techniques and would likely yield predictable results, in that the enhancement of Mashitani et al. would reduce the number of occlusions and artifacts produced in the image set of images and therefor reduce the need for extensive post-processing procedures to combat binocular rivalry between left and right images.

Response to Arguments

17. Applicant's arguments filed 22 September 2009 have been fully considered but they are not persuasive. On page 13 of the remarks filed 22 September 2009, the Applicant's representative argues, with respect to claim 1 (and similarly with respect to claims 2, 13 and 16 - 25) that "Wood neither discloses nor reasonably suggests both extracting a more inconspicuous region as a processed region and generating a

stereoscopic image set of images so as to make more inconspicuous the processed regions extracted than the target regions except for the processed region." The Examiner respectfully disagrees and asserts that, as best understood, Wood teaches extracting elements G and G' as locations within the image which do not include pairs of fused points between the left and right image, Figs. 2 & 3, Column 3 Line 57 - Column 4 Line 40, and generates an image set of images while making the extracted region more inconspicuous, Column 4 Lines 3 - 41 Wood teaches using post-processing using nearest occluded pixel information, a z-buffer for the nearest visible pixels and for the nearest occluded pixels, to fill in the gaps caused by shifts between left and right images so as to make the processed region less noticeable, more inconspicuous, i.e. "the filled gaps are highly correlated to the remainder of the image and as such are unobtrusive".

18. On page 13 of the remarks filed 22 September 2009, the Applicant's Representative also argues that Wood is not directed at mitigating binocular rivalry caused by stereoscopic vision. The Examiner respectfully disagrees and asserts that Wood is directed to combating binocular rivalry caused by stereoscopic vision. Wood's disclosure is directed to dealing with stereoscopic vision and how to handle situations where pixels, regions, between a left image and a right image do not have a corresponding pixel, region, in the other image. Wood corrects for such regions, thereby combating binocular rivalry which would persist from the difference between the left and right image, Wood Column 4 Lines 3 - 41.

19. On page 13 of the remarks filed 22 September 2009, the Applicant's Representative also argues that Wood fails to teach and would not have rendered obvious "a processed region processing step of carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the processed region extracted in the processed region extraction step than the target regions except for the processed region." The Examiner respectfully disagrees and asserts, as best understood, that Wood teaches the aforementioned limitation at least at Column 4 Lines 3 - 41. Wood teaches a post-processing routine which processes regions which do not include a pair of fused points, G and G', so that the image may be unobtrusive to the user.

20. Applicant's arguments with respect to claims 1, 2 and 4 - 25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIC RUSH whose telephone number is (571)270-3017. The examiner can normally be reached on 7:30AM - 5:00PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. R./

Examiner, Art Unit 2624

/John B Strege/
Primary Examiner, Art Unit 2624